MAKE UP STATION

Claim to Priority

This application claims priority to United States Provisional application Serial Number 60/450,522 entitled "Make up Station" filed on February 27, 2003.

Technical Field

The present invention relates generally to lighting systems. More particularly, the present invention relates to a lighting system on a make up station especially adapted for use by performers to aid in the application of theatrical cosmetics.

Background of the Invention

The costumes and cosmetics used by performers in theatrical and cinematic performances are complex and must be applied with care to obtain the desired visual effects on stage or under harsh lighting. Most theatrical actors and actresses prepare for performances backstage, where space is limited and lighting is often poor or nonexistent. Additionally, some theatrical production companies in better known venues or in television and movie productions will provide makeup artists for the actors. It is frequently difficult for these makeup artists to properly make up a large cast when they have limited space for their materials and little time before performances or between scenes to spend with each individual.

Lighted make up mirrors are known in the art but do not adequately address the unique difficulties faced in backstage areas. Some are small in size and are designed for

personal home use. Others are bulky and require special stands that make the mirror less appropriate for a crowded and bustling backstage environment.

Conventional make up stations are generally custom-built, and often require the coordination of a number of different contractors to complete installation. Custom built make up stations require the labor of multiple tradeworkers to complete. To complete the construction of a custom built make up station requires at least a carpenter, a glazier and an electrician and often a cabinet maker and a countertop fabricator. Consequently, a custom built make up station can be expensive and time consuming to build and install.

In addition, the conventional design of a make up station includes a mirror surrounded by a row of incandescent lamps. Incandescent lamps are preferred for their warm color temperature which is similar to natural light and the lighting used in theater and cinematic production. In addition, incandescent lamps are inexpensive and readily available. Typically, lampholders are placed generally on the same plane as the mirror and the lamps themselves extend forward of the mirror. With this arrangement, images of the lamps are reflected in the mirror causing glare and the distracting presence of the bulb images in the periphery of the mirror.

Thus, there exists a need in the theatric and cinematic industries for a lighted make up station that is appropriate for backstage use and that can be supplied in an economical fashion. Further, it would be desirable if the make up station provided even illumination, with distracting reflections reduced or eliminated.

Summary of the Invention

The make up station of the present invention substantially meets the needs of the industry as discussed above.

In one embodiment, the make up station of the present invention includes a mirror, a work surface, a reflective storage surface, an electrical and lighting system, and a reusable mounting surface. In this embodiment, the make up station can be mounted on a backstage wall for permanent use.

In a second embodiment, the make up station may be mounted immediately adjacent to other make up stations such that the lighting system is shared by adjacent make up stations. In another embodiment, the make up station may include a storage unit mounted below the work surface.

In a further embodiment, the make up station includes a mirror, an electrical and lighting system, and a portable station frame. The portable station frame further comprises a transport handle. In this embodiment, the make up station may be easily transported for use on location or in a temporary make up space while requiring minimal storage space when not in use.

The make up station of the present invention also places incandescent lighting in a location so that it cannot be seen in the periphery of the mirror and yet provides even illumination of a performer's face.

The periphery of the make up station both provides a support for lampholders to support lamps and also acts as a raceway for wiring for the light sockets, switches and a single or duplex outlet to accommodate the use of electrical appliances, such as curling irons and hair dryers, at the make up station.

Brief Description of the Drawings

Fig. 1 is a perspective view of a make up station in accordance with the present invention installed on a supporting wall;

Fig. 2 is a top plan view of the make up station of Fig. 1 with the head of a user schematically depicted and partially depicting additional stations on either side of a central station;

Fig. 3 is a perspective view of the make up station of Figs. 1 and 2 depicted in conjunction with two additional make up stations installed on a supporting wall in accordance the present invention;

Fig. 4 is a front view of the make up stations as depicted in Fig. 3;

Fig. 5 is a perspective view of a portable make up station placed on a supporting counter top in accordance with a further embodiment of the present invention; and

Fig. 6 is a top plan view of a make up station in accordance with the present invention showing incident and reflected light rays reflected from the peripheral edges of the mirror.

Detailed Description of Drawings

Referring to Fig. 1, the make up station 10 of the present invention includes mirror 12, electrical and light system 14, work surface 16, reflective storage surface 18, reusable mounting surface 20, and storage unit 22. The make up station 10 is depicted mounted on a supporting wall surface 24.

The mirror 12 is preferably about twenty-eight inches square but may be any size without departing from the spirit of the invention. The mirror 12 is shatter protected, for example, the mirrored surface 26 may be laminated to a plastic layer or a metal backer (not shown) that prevents shards from separating if the mirrored surface 26 is broken. Mirror 12 may also be tempered glass or shatter protected in other ways as well.

Work surface 16 is conveniently located about four inches below the mirror 12 and includes a concave front edge 30 to allow users to approach close to the mirror 12 while still allowing adequate workspace on the work surface 16. In one embodiment, the work surface 16 includes a trough 28 located immediately below the mirror 12 for holding make up pencils, brushes, or other small items. The work surface 16 is desirably formed from a matte white PVC laminate finish 32 over a wood core or wood product substrate (not shown) or other matte highly reflective diffusing surface to reflect light and not alter accurate color rendition. Finish 32 is also heat and stain resistant. The work surface 16 is designed to support up to a 300-pound load at any point. In one embodiment, the work surface 16 further comprises a storage unit 22 for out-of-the-way storage of large or infrequently used items. Storage unit 22 may include a drawer, bin or shelf situated under work surface 16.

Reflective storage surface 18 is preferably thirty-six inches wide and twelve inches deep but may be any other practical size without departing from the spirit of the invention. The storage surface 18 is intended to store wig boxes, infrequently used cosmetic or costume items, or other personal effects in a convenient yet out-of-the-way location. Undersurface 34 of the storage surface 18 comprises a matte white finish over a wood core (not

shown), like that of the work surface 16, that enables it to reflect light uniformly to provide accurate color rendition. Undersurface 34 is also heat resistant.

The electrical and light system 14 preferably includes frame 36, lampholders 38, incandescent lamps 40, switch 44, and duplex outlet 46. There are preferably nine lampholders 38 with corresponding lamps 40 on a make up station 10. The lampholders 38 preferably project from frame 36 at about a forty-five degree angle. The angle of the lampholders 38 and lamps 40 allows adjacent make up stations 10 to share a vertical row of lampholders 38 and lamps 40. Further, this angle of the lampholders 38 and lamps 40 positions lamps 40 reduce glare from the lamps 40 reflected in the mirror 12. The lamps 40 are enclosed by steel wire cages 50; a National Electrical Code requirement. The wire cages 50 are positioned such that they protect lamps 40 from breakage and protect users from burns from hot lamps 40 while minimizing shadows cast upon a user's face when the user is using the make up station 10. This application depicts and describes the invention utilizing incandescent light bulbs for lamps 40. While this is a preferred option, it is to be understood that the invention contemplates the use of other types of light sources including but not limited to fluorescent tubes, light emitting diodes and halogen lamps.

Switch 44 is operable to control the lampholders and lamps 40, while the duplex outlet 46 provides electrical power for styling accessories such as hairdryers and curling irons. Duplex outlet 46 is, typically, not controlled by switch 44 so that duplex outlet 46 always supplies power Mirror 12 is recessed slightly into the front surface of make up station and surrounded by raised trim 48. Raised trim 48 largely shields lamps 40 from being imaged in mirror 12 thus minimizing or eliminating undesirable peripheral reflections and glare. Raised

trim 48 may be an integral part of frame 36 or a separate part. Frame 36 forms a mirror surround and electrical raceway 42. Electrical raceway 42 is desirably formed of extruded aluminum. Electrical raceway 42 provides a convenient conduit for running and protecting electrical wiring associated with lampholders 38, switch 44, and duplex outlet 46 as well as supporting lampholders 38 at an angle to mirror 12 so that little or no reflected image of lamps 40 is visible to a viewer viewing his face in mirror 12.

The reusable mounting surface 20 can be cork board, a porcelainized steel surface ("whiteboard") or similar surface used to attach photos, papers, or similar items by tacks, magnets or other suitable removable fasteners, for easy viewing. The mounting surface 20 is preferably about six inches wide with a recessed concave edge 52 to maximize usable surface area on mirror 12. As depicted here, mounting surface 20 is shown on the right side of the mirror surface 18. However, mounting surface 20 is user-positionable and thus may be mounted on either side or on the top or bottom of the mirror surface 18 as is most convenient for an individual user.

Make up station 10 further includes a support frame 54 that is preferably welded steel. Make up station 10 further comprises a wall-mounting bracket (not shown) that is operable to mount the make up station 10 to a wall surface 24. The bracket (not shown) comprises a leveling provision and also allows for horizontal positioning adjustment.

Referring now to Fig. 2, a top view of a make up station 10 of the present invention is shown. The concave front edge 30 of the work surface 16 is depicted. Fig. 2 also shows two adjacent make up stations 10a and 10b with lampholders 38 and lamps 40 projecting at approximately a 45-degree angle from the frame 36, the three lamps 40 located on the inner

side of the first make up station 10 also illuminate the immediately adjacent side of the adjacent make up station 10a or 10b. This feature reduces the cost of adjacent units and simplifies the installation of multiple adjacent make up station 10. A first unit has nine incandescent lamps while each subsequent adjacent unit requires only six incandescent lamps to achieve the same lighting level for each make up station. Figs. 3 and 4 shows three make up stations located adjacent each other. Make up station 10 includes nine incandescent lamps, three across the top of the unit and three on each the right and left side. Make up station 10a comprises six incandescent lamps, three across the top of the unit and three on the right side. Make up station 10b also comprises six incandescent lamps, three across the top of the unit and three on the right side.

Note that switch 44 and duplex outlet 46 are located so that if there are multiple make up stations 10 installed side by side that all the switches 44 are on the same side of each unit in the row. In this fashion a performer located at one of the middle units in the row can turn on the lamps 40 at the make up station 10 directly in front of him as well as the adjacent make up station 10 that supplies light to one side of the make up station 10 directly in front of him without the need to leave his seat.

Referring now to Fig. 5, another embodiment, a portable make up station 56 is shown. The portable make up station 56 is similar to the make up station 10 depicted in Figs. 1-4 and is preferably for tabletop 58 use. The portable station's 56 smaller size and configuration make it easy to transport to temporarily established make up areas or on location. The portable station 56 includes mirror 60, electrical and light system 62, and portable station frame 64. The portable station frame 64 further includes a portable station handle 66 and base supports 68.

The electrical and light system 62 preferably includes a frame 70, lampholders 72, incandescent lamps 74, switch 76, and duplex outlet 78. There are preferably six lampholders 72 with corresponding lamps 74 on each portable make up station 56. The lampholders 72 preferably project from the frame 70 at about a 45-degree angle. This angle of the lampholders 72 and lamps 74 reduces or eliminates glare from the mirror 60 as is further discussed below.

Referring again to Fig 5, mirror 60 is recessed slightly into the front surface of portable make up station 56 and surrounded by raised trim 48 similar to make up station 10. Raised trim 48 shields lamps 40 from being imaged in mirror 12 thus minimizing or eliminating undesirable peripheral reflections and glare. Raised trim 48 may be an integral part of frame 36. Frame 36 serves both to form a mirror surround and electrical raceway 42 preferably formed from extruded aluminum. Electrical raceway 42 provides a convenient conduit for running and protecting electrical wiring associated with lampholders 38, switch 44, and duplex outlet 46. Electrical raceway 42 desirably has across sectional shape that approximates a scalene right triangle. Lampholders 38 are supported by the side of electrical raceway 42 that forms the hypotenuse of the triangle. This places incandescent lamps 40 adjacent to but partially behind the plane of mirror 12.

The lamps 74 are enclosed by steel wire cages 80, an N.E.C. requirement. The wire cages 80 are positioned such that they protect the lamps 74 while minimizing shadows cast upon a person's face when using the make up station 56. The switch 76 is operable to control the lampholders 72 and lamps 74, while the duplex outlet 78 provides electrical power for styling accessories such as hairdryers and curling irons.

As can best be seen in FIGS. 2, 3 and 4, adjacent make up stations 82 may be constructed in a right hand version 84 or a left hand version 86. Right hand version 84 includes incandescent lamps 40 and lamp holders 38 along the top edge of mirror 12 and the right hand side of mirror 12. Left hand version 86 includes lamp holders and incandescent lamps 40 along the top of mirror 12 and the left hand side of mirror 12. Combination of make up stations 10 with right hand version 84 and left hand version 86 of adjacent make up stations along a wall surface 24 allow for any number of make up stations 10 to be assembled to provide multiple make up stations without the need for substantial custom construction. It is desirable that either right hand versions 84 or left hand versions 86 but not both be combined with a makeup station 10 so that switches 44 and duplex outlets 46 are located so that if there are multiple make up stations 10 installed side by side all the switches 44 are on the same side of each unit in the row. In this fashion a performer located at one of the middle units in the row can turn on the lamps 40 at the make up station 10 directly in front of him as well as the adjacent make up station 10 that supplies light to one side of the make up station 10 directly in front of him without the need to leave his seat.

Referring to Fig. 6, incandescent lamps 40, raised trim 48 and mirror 12 are positioned relative to one another so that a light ray 88 emanating along a line tangent from the forward most edge 90 of incandescent lamp 40 and not being intercepted by raised trim 48 is reflected by mirror 12 so that it passes in front the eyes of a user 92. In this way the reflected image of incandescent lamp 40 is not visible to user 92 and reflected glare from incandescent lamps 40 reflected in mirror 12 is substantially eliminated while still providing bright and even illumination to the face of user 92. The path of light rays 88 is depicted from above but rays

from incandescent lamps 40 above mirror 12 are reflected in a similar fashion and are diffused upon reflection from work surface 16.

As is well known in optics, the law of reflection indicates that the angle of reflection (r)of reflected light rays is equal to the ray's angle of incidence (i). The angles of incidence and reflection, depicted in Fig. 6., are measured from an imaginary line normal to the reflecting surface. Here, lamps 40, 74 are positioned such that light rays emanating from them strike mirror 12 surface at an angle of incidence close to ninety degrees. Thus, the reflected light rays follow an angle of reflection close to ninety degrees that is also at a small acute angle to the mirror surface. Therefore, the reflected image of the lamps can only be seen by placing the viewer's eye very close to the mirror surface. This effectively eliminates the glare and distracting reflected images of lamps 40 or 74 for a user whose head is positioned conventionally in front of the mirror 12 or 60 while still allowing the benefit of having lamps 74 fully exposed to provide illumination in all directions from lamps 40, 74.

In operation, make up station 10 is secured to wall surface 24 by support frame 54. An electrical supply is connected to electrical and light system 14 and make up station 10 is ready for use.

When turned on via switch 44, incandescent lamps 40 provide even illumination at a warm color temperature. Work surface 16 is covered by finish 32 and reflective storage surface 18 has reflective undersurface 34. These reflective surfaces provide additional reflected illumination to illuminate the face of a user at make up station 10. Reflective storage surface 18 and storage unit 22 can be used to store items that are not immediately needed. Trough 28 provides a convenient location to store items that are currently being used such as makeup and

styling implements. Duplex outlet 46 is available for connection of appliances such as hairdryers or curling irons. Wire cages 50 protect incandescent lamps 40 from breakage and also protect users of make up station 10 from possible contact with incandescent lamps 40, which get hot in operation.

The positioning and orientation of incandescent lamps 40 in lamp holders 38, supported by electrical raceway 42, places incandescent lamps 40 in a location such that they provide even illumination for a user of make up station 10 without appearing as a reflection in mirror 12. In addition, the positioning of lamp holders 38 and incandescent lamps 40 provides for even partial illumination of any adjacent make up stations 10, when multiple make up stations 10 are orientated on a wall surface 24 in a serial fashion side-by-side. This arrangement includes at least one make up station 10 and at least right hand version 84 or left hand version 86. As can be seen any number of make up stations 10 can be installed adjacent to one another to accommodate as many users simultaneously as desired or needed.

As can be best seen in FIGS. 2 and 3, when multiple make up stations 10 are located side-by-side, only one of make up stations 10 need have incandescent lamps 40 on both vertical sides. Adjacent make up stations 10 have incandescent lamps 40 only along the top and along one side of mirror 12. A single make up station 10 with incandescent lamps 40 on both vertical sides of mirror 12 can be used at an end of a row of make up stations 10 with additional units all having incandescent lamps 40 located on only one side of the mirror 12 or a single make up station 10 with incandescent lamps 40 on both sides of mirror 12 may be place in the middle of a run of make up stations 10 with adjacent make up stations 10 with adjacent make up stations 10 on the right side having incandescent lamps 40 only on the right side of mirror 12 and

additional units of make up station 10 on the left side having incandescent lamps 40 only the left side of mirror 12.

This arrangement allows the creation of a series of make up stations 10 side-by-side of any number without the need for custom construction. In addition, incandescent lamps 40 that are located mirrors 12 provide illumination to users on both sides.

Referring to FIG. 5, portable make up station 56 is adapted to sit conveniently on any available tabletop 58. Portable station frame 64 includes and supports portable station handle 66 to allow for easy grasping and transport of portable make up station 56. Base supports 68 support portable make up station 56 on table top 58 in a stable fashion. Portable make up station 56 need only be plugged into an available electrical outlet and switched on via switch 76 in order to provide illumination for a portable make up station 56 user. Portable make up station 56 also includes duplex outlets 78 or a single outlet for convenient connection of make up and styling appliances. Switch 76 and outlet 78 may also be combined into a single assembly. Desirably the outlet 78 included GFCI protection. In addition, wire cages 80 protect incandescent lamps 74 from breakage during handling and transport as well as protecting users from possible burns by coming into contact with incandescent lamps 74.

The present invention may be embodied in other specific forms without departing from the spirit of the essential attributes thereof; therefore, the illustrated embodiments should be considered in all respects as illustrative and not restrictive, reference being made to the appended claims rather than to the foregoing description to indicate the scope of the invention.